

IN THE CLAIMS

Please cancel the existing pending claims including 39-42, 45-52 and 55-69 without prejudice or disclaimer of any subject matter in those claims and substitute for them the following new claims 70-85.

70(New). A propellant composition comprising a reduced energy binder, an oxidizer, and a fuel wherein

(a) said reduced energy binder includes a high molecular weight polyester polyol binder polymer including an amount of poly(tetramethylene adipate) having a molecular weight ( $M_{Wn}$ ) above 4000 (uncured) and an amount of one or more energetic plasticizers wherein the plasticizer to polymer ratio is less than 1.6:1;

(b) said oxidizer consists of a material selected from the group consisting of ammonium perchlorate and a mixture of ammonium perchlorate and sodium nitrate, and

(c) said fuel is aluminum.

71(New). A propellant composition as in claim 70 wherein said reduced energy binder further comprises an amount of inert plasticizer material.

72(New). A propellant composition as in claim 71 wherein said inert plasticizer is triacetin.

73(New). A reduced energy binder as in claim 70 wherein the one or more energetic plasticizers are selected from the group consisting of nitrate esters of the group consisting of n-butyl-2-nitrotoethyl nitramine; trimethylolethane trinitrate;

triethyleneglycol dinitrate; butanetriol trinitrate; nitroglycerin and combinations thereof.

74 (New). A reduced energy binder as in claim 71 wherein the one or more energetic plasticizers are selected from the group consisting of nitrate esters of the group consisting of n-butyl-2-nitratoethyl nitramine; trimethylolethane trinitrate; triethyleneglycol dinitrate; butanetriol trinitrate; nitroglycerin and combinations thereof.

75 (New). A reduced energy binder as in claim 72 wherein the one or more energetic plasticizers are selected from the group consisting of nitrate esters of the group consisting of n-butyl-2-nitratoethyl nitramine; trimethylolethane trinitrate; triethyleneglycol dinitrate; butanetriol trinitrate; nitroglycerin and combinations thereof.

76 (New). A reduced energy binder as in claim 73 wherein the plasticizer is selected from the group consisting of nitroglycerin, n-butyl-2-nitratoethyl nitramine, trimethylolethane trinitrate and combinations thereof.

77 (New). A reduced energy binder as in claim 74 wherein the plasticizer is selected from the group consisting of nitroglycerin, n-butyl-2-nitratoethyl nitramine, trimethylolethane trinitrate and combinations thereof.

78 (New). A reduced energy binder as in claim 75 wherein the plasticizer is selected from the group consisting of nitroglycerin, n-butyl-2-nitratoethyl nitramine, trimethylolethane trinitrate and combinations thereof.

79 (New). A propellant composition as in claim 78 wherein the plasticizer is trimethylolethane trinitrate.

80 (New). A propellant composition as in claim 70 wherein the poly (tetramethylene adipate) has a molecular weight MW<sub>n</sub> above 6,000.

81 (New). An improved high solid propellant composition comprising by weight:

- (a) about 10% cured poly(tetramethylene adipate) having a molecular weight MW<sub>n</sub> ≥ 6000 (uncured) cured using an isocyanate curing agent;
- (b) about 11% nitroglycerin plasticizer;
- (c) about 2.5% triacetin plasticizer;
- (d) about 22% aluminum; and
- (e) about 53% ammonium perchlorate oxidizer.

82 (New). An improved high solids propellant composition comprising by weight:

- (a) about 7% cured poly(tetramethylene adipate) having a molecular weight, MW<sub>n</sub> ≥ 6000 (uncured) cured using an isocyanate curing agent;
- (b) about 6.5% n-butyl-2-nitrotoethyl nitramine;
- (c) about 1.4% triacetin;
- (d) about 22% aluminum;
- (e) about 60% ammonium perchlorate; and
- (f) about 2% dicyandiamide.

83 (New). An improved high solids propellant composition comprising by weight:

- (a) about 11% cured poly(tetramethylene adipate) cured from a tetramethylene adipate prepolymer, MW<sub>n</sub> about 6,000 (uncured) using an isocyanate curing agent;
- (b) about 12% plasticizer selected from the group consisting of nitroglycerin and trimethylolethane trinitrate and combinations thereof;
- (c) about 22% aluminum; and
- (d) about 53% ammonium perchlorate.

84 (New). An improved high solids propellant composition comprising by weight:

- (a) about 11.3% cured poly (tetramethylene adipate) cured from a tetramethylene adipate prepolymer, MW<sub>n</sub> about 6,200 (uncured) using an isocyanate curing agent;
- (b) about 12.2% nitroglycerin plasticizer;
- (c) about 22% (30 $\mu$ ) aluminum; and
- (d) about 53% (200 $\mu$ ) ammonium perchlorate oxidizer.

85 (New). The propellant composition of claim 83 wherein (d) comprises about 30% ammonium perchlorate and about 22% sodium nitrate.

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